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# THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
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BY

## MRS. GLAISHER,

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the Elateridæ, and have many pretty things, especially among the velvety species, with a swollen thorax. Of Heteromera, Erotylidæ, Chrysomelidæ and Trimera, I have hosts of curious things, which are daily increasing in number. The only family in which there is an absolute deficiency, is that of the beautiful Cetoniadæ. I have only at present one or two Tænioderas, a fine green and black Coryphocera, and the handsome Macronota Diardi, which is, I believe, very rare: I scarcely dare hope to increase my collection of this family to any great extent, as they evidently are only abundant in mountainous and rather open shrub-producing districts, while they are scarcely at all represented in the dense and gloomy jungles which are the favourite haunts of all those insects which at any period of their existence feed on fresh or decaying timber, or on the boleti which grow upon it. Among my latest captures are, my first species of Paussus, which I have been long anxiously looking for: I took it in the daytime flying about fallen timber. Two days since I obtained a species of Malacomacrus, a Brazilian genus of Longicorns, described and figured by White in the 'British Museum Catalogue,' and yesterday, while at breakfast, a magnificent black and yellow spotted Lamia flew into the verandah, and was caught in my hand. I have now 135 species of Bornean Longicorns, and I do not despair of getting 200 before I leave this place, which I mean to work thoroughly.

To give English entomologists some idea of the collecting here, I will give a sketch of one good day's work. Till breakfast I am occupied ticketing and noting the captures of the previous day, examining boxes for ants, putting out drying-boxes and setting the insects of any caught by lamp-light. About 10 o'clock I am ready to start. My equipment is, a rug-net, large collecting-box hung by a strap over my shoulder, a pair of pliers for Hymenoptera, two bottles with spirits, one large and wide-mouthed for average Coleoptera, &c., the other very small for minute and active insects, which are often lost by attempting to drop them into a large mouthed bottle. These bottles are carried in pockets in my hunting-shirt, and are attached by strings round my neck; the corks are each secured to the bottle by a short string. The morning is fine, and thus equipped I first walk to some dead trees close to the house frequented by Buprestidæ. As I approach I see the bright golden back of one, as he moves in sideway jerks alonk a prostrate trunk,—I approach with caution, but before I can reach him, whizz! —he is off, and flies humming round my head. After one or two circuits he settles again in a place rendered impassable by sticks and bushes, and when he leaves it, it is

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to fly off to some remote spot in the jungle. I then walk off into the swamp along the path of logs and tree-trunks, picking my way cautiously, now glancing right and left on the foliage, and then surveying carefully the surface of the smooth round log I am walking on. The first insect I catch is a pretty little long-necked Apoderus sitting partly upon a leaf: a few paces further, I come to a place where some Curculionidæ, of the genus Mecopus, are always seated on a dry sunshiny log. A sweep of my net captures one or two, and I go on, as I have already enough specimens of them. The beautiful Papilios, Evemon and Agamemnon, fly by me, but the footing is too uncertain to capture them, and at the same moment a small beetle flies across and settles on a leaf near me—I move cautiously but quickly on—see it is a pretty Glenea, and by a sharp stroke of the net capture it, for they are so active that the slightest hesitation is sure to lose the specimen. I now come to a bridge of logs across a little stream; this is another favourite station of the Buprestidæ, particularly of the elegant Belionota sumptuosa. One of these is now on the bridge, — he rises as I approach,—flies with the rapidity of lightning around me, and settles on the handle of my net! I watch him with quiet admiration,—to attempt to catch him then is absurd; in a moment he is off again, and then settles within a yard of me; I strike with all my force, he rises at the same moment, and is now buzzing in my net, and in another instant is transferred in safety to my bottle: I wait a few minutes here in hopes that another may be heard or seen, and then go on; I pass some fallen trees, under which are always found some Curculionidæ, species of Alcides and Otops,—these I sweep carefully with my net and get two or three specimens, one new to me. I now come to a large Boletus growing on a stump,—I push my net under it, two Thyreopteræ run on to the top, I knock one with my hand into my net, while the other has instantly escaped into a crack in the stump and is safe for this day, but his time will come. In some distance now I walk on, looking out carefully for whatever may appear; for near half-a-mile I see not an insect worth capturing; then suddenly flies across the path a fine Longicorn, new to me, and settles on a trunk a few yards off. I survey the soft brown mud between us, look anxiously for some root to set my foot on, and then cautiously advance towards him: one more step and I have him, but alas! my foot slips off the root, down I go into the bog and the treasure escapes, perhaps a species I may never obtain again. Returning to the path, another hum salutes my ear, and the fine Cetonia, Macronota Diardi, settles on a leaf near me, and is immediately secured: a little further, a yellowpowdered Buprestis is caught in the same manner. Having reached the usual limits of my walk in this direction, I turn back and am soon rewarded by what appears a Colliuris sitting on a leaf, but which is discovered, on capturing it, to be of the equally acceptable Longicorn genus Sclethrus: a little further and a true Colliuris is caught. These insects I have named, from their elegant form, lady-beetles, English names being necessary for the use of my boy Charley, who is now a rather expert collector. During the rest of the walk back, the principal insects I get are two velvety Elaters crawling on the logs, and two or three curious Heteromera in the same situation. Returning by the Chinamen's houses, I find, at an odoriferous puddle, the fine Papilio Iswara, which I capture, as well as a P. Evemon and P. Sarpedon. I then walk to the other clearing, where, among the fallen timber and branches, I get several small Buprestidæ; numbers of the handsome red Eurycephalus maxillosus are here constantly flying about and crawling on the timber. On one tree I find running about with ants, which they much resemble, the curious little short-elytra'd Longicorns, Hesthesis sp. Here also, I get two or three pretty species of Clytus and a Callichroma. Between whiles I have picked up a few flies, wasps and bugs, and have got tolerably filled bottles. Returning home, I find Charley has also had a fair day. We empty our bottles into boiling water, and on pinning and setting our captures, find we have got between us 94 beetles, 51 different species, 23 of which are new to my collection: I have 5 new Longicorns, 2 new Buprestidæ, and 5 new Curculionidæ. I have been out five hours, and consider this a very good day's work. It will be seen that a far larger number of insects can be collected in a day in England, but perhaps hardly such a large proportion of species.

A. R. Wallace.

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*Occurrence of the Honey Buzzard* (Falco apivorus) *near Truro.*—A specimen of the honey buzzard was shot last week at Carclew, the residence of Sir Charles Lemon; and it appears that this is the second instance of its occurrence in the same locality, and the only two recorded instances of its appearance in this county. The specimen that was obtained some years since, and which I was previously unaware of, I had an opportunity of cursorily inspecting yesterday at the Royal Institution's Museum at Truro; and it appeared to have a greater preponderance of brown both on the upper and lower plumage than the one recently killed. The under parts are rufous-brown, with a few narrow, transverse bars of white, about six in number, at some distance from each other: in the specimen just obtained the under parts are creamy white blotched with light rufous-brown, becoming more transverse towards the lower parts. The feathers of the upper breast and throat have a very dark hair-like streak down the shafts of each feather, very distinct and remarkable at some distance. The variations in the plumage of this species are apparently so frequent that it is often difficult to determine the sexual distinctions, as well as the signs of the adult and unadult state of its plumage. Authors, I observe, give the female two shades of brown to her breast and belly, and more or less white to the immature bird's head and neck. The specimen lately obtained from Carclew, and which is now before me, proved on dissection to be a young male. There is no white about the head, and the fore part of the head and the whole of the region of the eyes are of a dull bluish ash. The tail has no distinct bar, but the upper third presents a darker shade of brown than the lower part; the tip to the extent of an inch almost black. The iris, which I examined in the flesh, bright yellow.—*Edward Hearle Rodd; Penzance, June* 30, 1855.

*Occurrence of the Roller* (Coracias garrula) *in Suffolk.*—A specimen of this rare and handsome bird was shot on the 28th of May, at Honiton, near Somerleyton. It proved to be an adult female.—*H. Stevenson; Norwich, June* 25, 1855.

*Occurrence of the Pectoral Sandpiper* (Tringa pectoralis) *on the Coast of Northumberland.*— A mature female of that rare bird, the pectoral sandpiper was shot by Mr. R. Duncan, of Newcastle, on the Northumbrian coast, near Whitley, on the 27th of June last. It agrees in every respect with the description of that species by Mr. Yarrell, and, as in his instance, it showed a great partiality for sitting on sea-weed, always, when disturbed, flying from one heap to another, uttering at the same time a loud and peculiar note. — *Thomas John Bold; Angas Court, Bigg Market, Newcastle-on-Tyne, August* 2, 1855.

*Occurrence of large Flocks of Crossbills near Hull.*—We have lately had a very large arrival of crossbills, large flocks having been seen in various parts of the country in this neighbourhood. I have myself noticed on several occasions small flocks flying about in the vicinity of the town, their presence being indicated by their peculiarly lively call-note. I saw a gentleman this morning (from a village near the shores of the Humber), who said they abounded there in extraordinary numbers, the flocks arriving early in the morning from over the sea, and flying eastward at a great height. During the daytime, when congregated in the trees, they allowed their numbers to be much thinned by the gun without being much disturbed. Parties who shot them for food reported them to be very good eating.—*G. Norman; Beverley Road, Hull, August* 7, 1855.

*Note on the destruction of Swallows, &c., by the severity of the weather.* — I have been somewhat surprised that none of the correspondents of the 'Zoologist' have alluded to the remarkable destruction of Hirundines and other birds which occurred at the end of May in the present year. I have traced this destruction over many portions of Derbyshire, Nottinghamshire and Leicestershire; and it is probable that it was not confined to the midland counties. The night of the 30th of May was extremely cold, and on the 31st numbers of the chimney swallow (*Hirundo rustica*) were found dead in various parts of Derbyshire. Four were found in the court-yard at Melbourne Hall, and many lying at intervals on the banks of the pool. The margin of a small rivulet below King's Newton was dotted with them at intervals for more than a mile: apparaently they had tried to gain the bushes whereon to roost, and failed from exhaustion. On Newton-field farm thirty were picked up. On the evening of the 30th swallows were exceedingly tame: many were knocked over by boys with sticks and stones. Some labourers who came over Swarkeston Bridge noticed great numbers settled on the parapets and the road, scarcely able to crawl along. Those that died were very poor; indeed, I knew an instance in which some seemed driven to such extremities that they came and fed with some pigs out of the pig-trough. A few days previously the weather had been warm, and brought out numerous insects, which the returning cold had killed, and the swallows in many cases died for lack of sustenance. This was evidently not the case with all. Upon examining the bodies of several I found the feathers much cut and mutilated, and many of the tail-feathers were completely knocked out; and I have no doubt such birds were killed by the hail-stones which fell on the 30th, and which were driven about with great force by the wind. Many swallows were found dead, floating upon the surface of the Trent, and lay with their wings expanded as if they had been suddenly checked in their course while flying. Very few swallows escaped with life. I never heard that any swifts or sand martins died, but the common martins suffered considerably. On the 30th of May a curious circumstance was noticed in the market-place in Derby. Against the ledges of the windows of the New Assembly Room the martins clustered together by hundreds, for the purpose of keeping themselves warm. Several which I saw fell to the ground, not being able to sustain their position on account of their weakness. At Chesterfield, Ashbourne, and indeed over a considerable portion of Derbyshire, the destruction of these birds was extensive. In Leicestershire many were picked up near Castle Donington, on the borders of Donington park, Wilson, and other places. Near Ratcliffe and Holme Pier Point, in Nottinghamshire, the destruction was general. Large numbers suddenly disappeared, and were afterwards found dead in sheds and covered places, in which they sought a friendly shelter. On the premises of the Rev. J. J. Peach, near Ratcliffe, thirty were found, and more than one hundred between that gentleman's residence and the village. At Wilford hundreds of swallows congregated on the roof of a house of a gentleman resident there, and after remaining the whole of the night, and also the next day, dropped off the roof by scores in a perfectly lifeless state. No wonder that these interesting little beings suffered so much, when at High Oakham, in the same county, the cold was so excessive as to cause the death of three sheep which had been recently clipped. Numbers of the landrail and other migratory birds fell a sacrifice to the cold weather. In the parish of Melbourne, Derbyshire, more than a dozen were picked up dead and very poor. Those that escaped had the eggs, which they were incubating, spoiled. Indeed, the weather seems to have caused great irregularity in the incubation of the eggs of the landrail. I found in the same field a nest containing eleven eggs not incubated, a brood of young birds just hatched, and some also about three weeks old and nearly feathered. Many broods this year consist merely of from 2 or 3 to 5 or 6 birds instead of 12 or 13. With partridges this is also the case in many localities, and I believe also with grouse. *John Joseph Briggs; King's Newton, Swarkeston, Derbyshire, August*, 1855.

*Occurrence of Buonaparte's Gull* (Larus Buonapartii) *on the Irish Coast.*—On Wednesday, the 14th of February, 1855, Captain Watkins, a brother-officer of mine, shot a gull on the coast near Skerries, about 17 miles north of Dublin, which is pronounced by all the Natural-History societies of Dublin to be Buonaparte's gull, of whose occurrence I believe there are but two previously recorded instances in Great Britain. The bird has been preserved and mounted by Mr. Baker, of Grafton Street, Dublin, and is now in Captain Watkin's collection.—*T. L. Powys; Mount Wise Barracks, Devonport, May* 21, 1855.

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*Child and Snakes.*—A man and his wife, in humble circumstances, by the name of Hill, live in Gilmanton, about two miles from London Ridge. They have several children, and among them a bright little girl, six years old, who, some six weeks ago, got into the habit of going out and spending part of the day away from home. The father worked out at day's work and the mother was busy at home, and not much notice was taken of it, though the girl remarked upon what nice times she had with her pets in the bushes, and several times spoke about the snakes. It was supposed that she spoke figuratively, as children are apt to do, representing their dumb playthings as possessed of intelligence. One night she stayed out till past nine o'clock, and her parents went out and called for her, but she did not answer. After a while she came home, and reluctantly told that she had been playing with the snakes. The mother's anxiety became great, and the next morning she persuaded her husband, before he went to his work, to go with the girl and see if she found any snakes. They went off, and waited a moment, and out came two black snakes, the one a little over four feet long, and the other a monster of his kind, judged to be between six and seven feet long. The father looked with astonishment and fear as he saw the snakes hasten with joy to the feet of his child, and yield delighted to her fondling caresses, coil themselves lovingly about her neck and bosom, crawl into her lap and cuddle down together in child-like security, and apparently fall to sleep while she patted and gently stroked them with her tiny hand. The father became indignant, and ordered his daughter to go home if these were her playmates. He went off to his work, and she remained with the snakes in spite of his orders. So things rested for a few days, an older sister going with her and seeing her play with and feed the disgusting reptiles. At last the parties became much excited about the matter, the mother threatening to shoot the snakes if the father did not, the child protesting. But the prevailing idea, that if you kill the charmer the charmed one will languish and die, induced him to consult Dr. Wight, who advised him not to kill the snakes. Last Sunday morning Mr. Hill, with gloves upon his hands, started in pursuit of the snakes. He found the smallest one, and chased it a long distance before it stopped so that he could get hold of it. At last he succeeded in catching it, and now keeps it secured in a sugar-box. It is cross to the rest of the family, but some of our informants have seen it coil itself about the neck of the little girl, fold itself to sleep in her lap with the fondness of a pet lapdog. It eats freely when fed by her, but seldom when fed by others. The little girl was asked if she was not frightened when she first saw the snakes. She said she was terribly frightened; and when asked why she did not run, she said she tried to, but could not; she also tried to scream for her mother, but could not speak a word. The idea was that she was paralyzed by the magnetic power of the snakes. The first time she remained with them a very long time, could not tell how long. Afterwards daily she staid with them several hours, feeding them regularly. She says they liked sweet things best, and that she stole three cakes of maple-sugar that her mother had laid away, and sweet gingerbread whenever she could, to give them. The big snake would try to drive the small one from her when fed, and she cuffed him several times, and he returned the compliment by taking her fingers into his mouth several times, without doing much harm. Consequently she don't love this snake as much as she does the other one, though he is generally fond of her. The parents, with the little girl and snake, are now on a visit to this city, for the purpose of receiving such aid as the minds of scientific men can bring to them. They have been visited in their rooms by many citizens since their arrival, on Friday; and the deep interest which the entire community feel in this very remarkable case, together with the curiosity manifested to see them, has induced Mr. Hill to prolong his visit for two or three days, for the purpose of giving the public such an opportunity at Cochituate Hall, Tremont Street, near the head of School-street, on Monday, Tuesday and Wednesday afternoons, July 23rd, 24th and 25th, from two o'clock till five p.m. His stay must of necessity be brief and cannot, by any possibility, be extended beyond this time.—*Boston* (*U.S.*) *Evening Gazette*, *July* 21, 1855.*

*Gonepteryx Rhamni double-brooded.*—I only saw the May, June and July numbers of the 'Zoologist' a day or two since, and was not previously aware of the discussion as to whether G. Rhamni is or is not double-brooded. Mr. Bree's letter compels me first to make a few remarks upon the meaning of the term double-brooded. Until I read his communication I never supposed that it was applied to a species which does not go through all its changes twice in one year; in other words, which has not two distinct broods in each season. An insect which is hatched from the egg in the spring, goes through its changes during the summer, and produces the perfect insect in the autumn, hybernates, and reappears in the spring, cannot possibly be called double-brooded; and this is the case with G. Rhamni. There is most certainly but one brood in the year. I have reared numbers from the eggs, and can speak positively on the subject. The female butterfly deposits her eggs about the middle of April, upon the shoots of Rhamnus catharticus and R. Frangula; and in a lane near this place, where the former species grows intermixed with dogwood, whitethorn, blackthorn, &c., I have often watched the female, and observed how unerringly she distinguished the shoots of the buckthorn, never depositing an egg upon the twigs of the other shrubs with which it was closely intermixed. These eggs hatch early in May, and the larvæ are full-grown about the end of June; they then assume the pupa state, and in twenty days the butterflies come forth, that is, about the end of July, and they continue to appear till the middle of August. These specimens hybernate, and reappear in the spring. A moment's consideration must convince any one that the statement in Humphrey and Westwood's work, that a fresh brood appears in May, is incorrect: the insect could not possibly go through its changes in so short a time. The perfect state of some of the specimens which appear in spring is no proof that they have not hybernated; but I must say that I have never seen one equal to those found in August. Still, I admit that many are in good condition; but it must be remembered that numbers become quiescent very soon after they have emerged from the pupa state, and appear in spring almost as fresh as when first hatched. That this species sometimes exists very nearly a twelvemonth in the perfect state is a fact, having myself had a female alive from August till the beginning of May; and I have seen specimens in June which were most certainly disclosed the previous summer. Many species which hybernate live as long, especially in cold, backward seasons. An outhouse on my premises is a very favourite hybernating-place with Gonoptera libatrix. I have often seen two or three dozens sitting on a beam. They first enter the place at the end of August, very soon after emerging from the pupæ; and this year, owing no doubt to the cold, late spring, some of them did not move till the middle of June; and last night (July 13th) I saw three or four specimens at sugar, which of course had survived the winter, and were still in very good condition. Before quitting the subject I may just observe that in warm seasons a few specimens of species which are usually single-brooded will appear in the autumn, but they are invariably barren. Last autumn I had the eggs of a female Aplecta occulta sent to me. When they hatched, a few of the larvæ grew much more rapidly than the others, became pupæ, and in October produced fine specimens of the imago, the larger portion of the larvæ at that time being very small, and having ceased feeding for the winter. The same thing has occurred with Aplecta herbida, Cerura furcula, &c.—*Henry Doubleday; Epping, July* 14, 1855.

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* Obligingly communicated by William Yarrell, Esq.

*Gonepteryx Rhamni double-brooded.*— On this subject the 'Zoologist' contains the opinions of three naturalists: first, that of Mr. Hawker (Zool. 4650), that the species is double-brooded; second, that of Mr. Newman (Zool. 4706), that there is but one brood during the year; third, that of Mr. Bree (Zool. 4740), that there are two flights in the year, with a disposition to believe there are two broods also within that period; and, lastly, there are the funny remarks of Mr. Hawker (Zool. 4765). Now, it is very curious that three persons who have had opportunities of observing should have written on this subject, and yet have advanced nothing more than "opinions" about the matter. Not a word is said about the history of the insect, except the quotation from Haworth, that both "males and females live through the winter," and that "the female deposits her eggs in the spring." I have a fact to state which is a real step towards settling the point in dispute; but first I wish to remark on the theory set forth by Mr. Bree, that "the perfectly fresh and brilliant condition in which some at least of the vernal specimens appeared showed that they could not have hybernated, but must have emerged from the chrysalis at that early season." The "practical entomologist" who made this profound remark could have had very little experience on the subject of which he spoke; for it is well known that, as a rule, the specimens of such species of insects as hybernate lay up for the winter almost immediately upon exclusion from the chrysalis. They thus get no injury by flying, and, as many would remain during winter in places quite secure and defended from the weather, such specimens would emerge in the spring perfectly fresh and brilliant. Mr. Hawker's observations may very well be left for Mr. Newman to reply to: it appears to me that he makes out from Mr. Newman's words a great deal more than they imply; and the inferences are very curious. Now for my fact. On the 31st ult., at Mickleham, I saw plenty of the larvæ of G. Rhamni, in all stages of growth, on Rhamnus catharticus, and saw a *faded imago flying*, but could not catch it. On the 5th inst., at Darenth Wood, the larvæ, also of various sizes, were abundant on Rhamnus Frangula; and I caught, flying, a female imago, of which the colour is faded and the wings ragged. I could from these facts easily build up a theory which would read as well as some we have had before us; but I only say that the caterpillars I saw must be the first brood, because there were no leaves on the trees to nourish one earlier; and it now only remains for some one to find a second brood this year to establish that the species is double-brooded. The condition of the female I caught, taken, be it noticed, at the time some of the larvæ were full-fed, shows that it could have belonged to no "summer" brood. The larvæ I found will be butterflies in August. The second brood of larvæ therefore must be looked for in August, and I hope whoever finds will inform us.—*J. W. Douglas; Lee, July* 12, 1855.

*Gonepteryx Rhamni double-brooded?*—Before touching upon this *vexata quæstio*, will you allow me to intrude upon you the answers I have received from my friend Professor Zeller to the first four somewhat similar questions I propounded at page 150 of the 'Entomologist's Annual:'—

"1. Papilio Machaon. The Machaon which you saw on the 25th of May at the Forester's house had that month escaped from the pupa, which had wintered, and of which the larva had lived in August and September (probably on Athamanta Oreoselinum). Its subsequent appearance takes place in July and August, from the eggs laid in June. Two broods in the year are in our neighbourhood past all doubt, and there appears no reason why in England it should only be single-brooded.

"2. Colias Hyale flies at the end of May and beginning of June, and has then escaped from pupæ of which the larvæ, of various sizes, had wintered. Its later appearance is from July to late in September. The latter specimens are probably all descendants of the Hyale which fly in May; since from eggs which I collected in July, and the larvæ from which I fed with their favourite plant, Trifolium repens, I obtained a male butterfly on the 3rd of September. The females which come out at that time certainly lay eggs, from which in about ten days the larvæ proceed, which on the approach of frost seek their winter-quarters. Thus this species is certainly *double-brooded.*

"3. Melitæa Selene appears with us in August, not scarce, in the same places which it frequents in May and June. Euphrosyne is too scarce here for me to have observed it twice a-year; but I doubt not that where it occurs abundantly it is *double-brooded.*

"4. Argynnis Lathonia, quite certainly *double-brooded;* flying in June from larvæ that have wintered. The summer brood appears in August, and continues till late in September. As in Hyale, it is much more plentiful than the spring brood; whilst the reverse is the case with Selene."

In the two first of these instance we have the insect traced through its various stages of egg, larva, pupa and imago, and, insects all being subject to these metamorphoses, that seems the rational mode of proceeding in an argument on such a subject. Now, to apply this to Gonepteryx Rhamni, do not the hybernated females lay eggs in the spring?—do not these eggs produce larvæ which feed up in May, and furnish the perfect insect in June?—do not these latter lay eggs which produce larvæ that feed up in July?—and do not these larvæ furnish the autumnal and *most plentiful* brood of the imago of G. Rhamni? I pause for an answer to these inquiries. It seems to me the height of absurdity that *we know* that Nepticula anomalella and N. marginicolella are double-brooded, and that we have good grounds for believing that Nepticula angulifasciella and N. viscerella (though respectively feeding on the same plants, rose and elm) are single-brooded, and yet no entomologist exists in Britain sufficiently observant to have noticed the transformations of G. Rhamni, the double-broodedness of which was never questioned till the Editor of the 'Zoologist' thought he had discovered—a mare's nest.—*H. T. Stainton; Mountsfield, Lewisham, July* 11, 1855.

*Occurrence of Vanessa Antiopa in North Wales.*—On the 30th of last June I saw a fine specimen of Vanessa Antiopa near Llyn Ogwen, Caernarvonshire, North Wales, but did not secure it.—*Samuel Price;* 44, *Bell Barn Road, Birmingham, August* 4, 1855.

*List of a few rare Lepidoptera captured in Wales.*—I have collected during the greater part of the last three summers in this valley, and, as very few Welch localities have appeared in the 'Zoologist,' have sent a short list of some of my rarer captures, and hope that as a small contribution towards a better knowledge of the entomological productions of the principality it will be acceptable. I have no doubt that, if thoroughly worked, Wales would prove quite as rich in novelties, for its extent, as Scotland has done.

Trochilium sphegiforme. In June, 1854, I bred a female of this fine insect, and took three males at liberty; and in July this year I had again the good fortune to meet with it.

Luperina furva. Many specimens came to sugar from the middle to the end of July this year, all males. In 1853 I took several off the flowers of Scabiosa columbaria, from the middle to the end of August, all females.

Spælotis cataleuca, Agrotis Ashworthii. Both came to sugar during July. They appear to be exclusively attached to the limestone, and are rather local there. I took a single specimen of the latter species on the 20th of July, 1853, about a mile from the nearest limestone, but have not since met with one even on trees only a few yards off. They seem to secrete themselves during the day amongst the loose, broken stones lying at the foot of the rocks, and are very much infested with a scarlet Acarus. Two females of Ashworthii laid eggs in the ropes: these were at first of a pale straw-colour, but on the fourth day changed to a delicate flesh tint, and assumed a dark pink spot at the apex, and a zone of the same colour round the middle.

Agrotis corticea is common in the same locality as the last, but has a much more extended range. I have taken it, but sparingly, in other parts of the valley.

Cerigo cytherea, Rusina tenebrosa, Noctua triangulum, Neuria Saponariæ, &c. All at sugar, in July.

Xylina rhizolitha. At sugar, October.

Harpalyce picaria. By beating hazel, beginning of July.

Homeosoma eluviella. At sugar, July 19.

Tinea semifulvella. By beating oak, May 18, July 16.

„ rufimetrella. By beating hawthorn, July.

Micropteryx Leppella. Common in June.

Nemotois Scabiosellus. I have several times seen the female in the position mentioned by Mr. Stainton, her abdomen thrust down amongst the florets of Scabiosa columbaria, and her wings lying expanded on the top of the flower; but have failed to detect either eggs or larvæ.

Cerostoma sequella. By beating Acer campestre, in September.

Cleodora Cytisella. Common amongst brake, July and August.

Œcophora grandis. Not uncommon in the end of May and June, in one fence composed, like most of them in this neighbourhood, of a mixture of dead and living hazel; in this one, however, mixed with some dead birch. They fly only in warm sunshine, from 10 a.m. to 1: when the sun is off the fence they cannot be made to fly.

I think they secrete themselves in dead leaves on the ground, they so soon become worn.

Pancalia Latreillella. Very scarce in the same fence as the last, May 27 and 28.

Argyresthia glaucinella. Taken sparingly from the middle of May to the end of June, sitting on the trunks, and beaten from the branches, of three or four very old, half-decayed oaks.

Chauliodus Chærophylellus. From the beginning of October to the end of June.

Elachista Gangabella? By beating hazel, May and June.

Lithocolletis Roboris. Not uncommon in May.

„ hortella. One specimen, May 15.

„ tenella. Scarce. Middle to end of May.

—*John S. Ashworth; Bryn Hyfryd, Llangollen, North Wales.*

*Occurrence at Richmond, Surrey, of a Coleopterous Insect new to Britain.*—Four or five years ago I was waiting in the garden belonging to the Union at this place for a friend who had gone into the house to see one of the inmates, and, entomologist-like, I occupied the time in examining the surrounding paling. Along with some other things, I captured what I imagined was a specimen of Tamicus bidens, but, finding on after examination with my friend Mr. Dawson, of Geodephagous celebrity, that it certainly was not that, and not being able to identify it, by his advice it was sent to Paris, whence it was returned as Bostrichus bispinus of Megerle, with the remark, "Je le crois inédit." I know not whether it has ever appeared in printer's ink; but at any rate, not wishing to add to synonyms already sufficiently numerous, I shall attempt to give a description, under the above cognomen, sufficient to enable it to be recognized if it has occurred elsewhere in this country. Slightly shining, with scattered hairs; thorax pitchy chestnut, darkest in front; elytra paler, a dark testaceous. The thorax is rather narrowed in front, where it is studded with tubercles arranged somewhat in curved rows parallel with the anterior margin of the thorax, which appears to be slightly reflexed. The remainder of the thorax is punctured, with a ridge in the centre extending from the tubercled portion to the hinder margin. Elytra punctured, with a single shallow stria on either side the suture. Apex retuse from the sudden widening of the sutural striæ, and the upper edge armed with a tooth as in bidens, but larger, curved and claw-like; in advance of each tooth is a small tubercle. The limbs were not set out, and now that it is old and dry I do not wish to incur the risk of attempting it, so that further details cannot be added; but I think enough is given above (and probably more than enough) to enable any captor of the species to recognize it. I am aware that the occurrence of a single example of a species is slender ground for admitting it into our Fauna, especially when it belongs to the Xylophagous tribe; but the locality in this case does not appear to be a suspicious one; and, as I have never searched it since, it is possible that a further examination, which I intend to make, may lead to the capture of other examples.—*George Guyon; Richmond, Surrey, April* 28, 1855.

*Great abundance of "Clegs" in Cumberland and Northumberland.*—I certainly never recollect such a plague of "clegs" (*Hæmatopota pluvialis*) as our district has this season been visited with. When in Cumberland, in the second week of July, they were in such numbers on the moors and other elevated places that I was frequently driven from my pursuits by the pertinacity of their attacks. The same abundance was noticed in many parts of Northumberland; indeed, they are said to have been in such force in some places as to be a perfect torment to man and beast. This I can readily believe, as my face and hands were much swollen by their villanous bites.—*Thomas John Bold; Angas Court, Bigg Market, Newcastle-on-Tyne, August* 3, 1855.

*Duplicates of the Genus Colymbetes.*—The water-net has produced duplicates of the following species of Colymbetes: I shall be much pleased to send them to any entomologist as long as the store holds out: C. oblongus, *Ill.*, chalconotus, *Pz.*, maculatus, *Lin.*, vitreus, *Pk.*, Sturmii, *Gyll.*, bipustulatus, *Lin.*, ater, *Fabr.*, obscurus, *Marsh*, angustior, *Gyll.*, fuliginosus, *Fabr.*, pulverosus, *Knoc.*, exoletus, *Fors.*, and bistriatus, *Bergst.* I shall be much obliged for specimens of the following species, which do not appear to be metropolitan: C. arcticus, *Pk.*, fontinalis, *Ste.*, congener, *Pk.*, uliginosus, *Pk.*, dispar, *Bold*, brunneus, *Fabr.*, notatus, *Fabr.*, and adspersus, *Fabr.* I wish it to be distinctly understood that my offer to distribute duplicates is quite unconditional, and not in any way dependant on gifts I may receive. I hope this mode of advertising entomological duplicates and desiderata will be followed by my readers: the pages of the 'Zoologist' are at their service, and there is no longer any duty on advertisements.—*Edward Newman.*

*Enormous Flight of Ephemeræ.*—As we were steaming down the Rhine, and near Bonn, with a brisk breeze up the river, we became aware of an appearance as if a heavy storm of snow were coming up against us: we were soon in the midst of a shower of Ephemeræ, all in an immature state, having the wings opaque and white: they fell in multitudes on deck, drifting in places into white snow-like masses. The storm continued for miles, the poor things being driven before the wind with that confused indeterminate motion we so often see in flakes of snow.—*Henry Newman; Brussels, August* 11, 1855.

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*Short Directions for the Management of Marine Vivaria.*—I am preparing a handbook on the management of marine vivaria, but as my time will not admit of its publication forthwith, and being deluged with applications from friends requiring to be fairly started, I have thought it right to send to the 'Zoologist' the heads of what I consider to be of vast importance, and which, if fairly carried out, will repay those who attempt it with the success equal to that obtained by myself and others.

*First.*—When you have obtained your tank, in the first place build up your rockwork: when the cement is set, soak the tank well, that it may be perfectly cleansed from oil and other noxious substances. Coral rag is the best rock for the purpose.

*Secondly.*—Place your shingle and sand at the bottom of the tank, and then pour gently on it the sea-water; leave it for a day, and the sand which was stirred up will subside; you can then put in a little more shingle when required.

*Thirdly.*—Obtain your sea-water, when possible, from the western coast; it is much purer than that on the eastern coast. Use a pine cask for the conveyance of the water; oak casks are injurious, from the tannic acid they contain, and casks that have contained fermented liquors are especially deleterious. When the water in the tank has cleared itself, place the weeds in it, and place the tank where the sun can shine on it for at least two hours during the day.

*Fourthly.*—When the weeds throw off pretty freely bubbles of oxygen you may safely put in some animals; Actiniæ are good ones to commence with: add the animals gradually, until the tank is properly established.

*Fifthly.*—In placing in old shells and *débris* watch carefully that there are no dead animal matters attached. The Annelides are very prone to die and form a nucleus of putrefying matter: it is better not to place in any Annelides until the tank is established; the death of a few is then of slight importance.

*Sixthly.*—All large stones should be raised a little from the bottom, so as to allow a wash under them, and also the Crustacea to cleanse all the dead animal and vegetable matter: this will prevent the black deposit, which is a sure sign of sulphuretted hydrogen.

*Seventhly.*—Do not discourage the confervoid growth on the sides of the tank, until the tank is perfectly established; its occurrence is a sure sign the water is in good condition, and it is my opinion it oxygenises the water more effectually than do the larger plants.

*Eighthly.*—Syringe the water at times; it can do no harm, and the animals appear to like it.

*Ninthly.*—Do not overcrowd your tank.

*Tenthly.*—Remove animals as soon as they are dead.

*Eleventhly.*—Use sea-water in preference to any salt and water.

I am confident that if the above very simple rules are attended to the owners of vivaria will find success the rule and failure the exception. What is to prevent them being as successful as the Zoological Society? it is to Mr. Mitchell's care and attention that their success is due. I am now engaged in maturing a new plan for transporting some of the animals and all the weeds, and which, if successful, will lessen the carriage considerably, and also lessen the risk of death amongst them. I shall be much obliged to any gentleman who can give me any hints or advice, and who will allow me to make use of it in my forthcoming hand-book, all of which shall be duly acknowledged. Any information of experience as to the shapes, dimensions aud prices of tanks will be acceptable. I myself incline to a shallow tank with a large area.—*William Thompson; Weymouth, August* 11, 1855.

## PROCEEDINGS OF SOCIETIES.

### ENTOMOLOGICAL SOCIETY.

*August* 6, 1855.—JOHN CURTIS, Esq., President, in the chair.

### *Donations.*

The following donations were announced, and thanks ordered to be given to the donors:—'The Literary Gazette' for July; by the Editor. 'The Athenæum' for July; by the Editor. 'Journal of the Society of Arts' for July; by the Society. 'Journal of the Royal Agricultural Society of England,' Vol. xvi. Part 1; by the Society. Hewitson's 'Exotic Butterflies,' Part 15; by W. W. Saunders, Esq. 'Die Gallen. Versuch die durch Insecten an den Pflanzen Verursachten Answüchse nach ihren Haupttypen und Wachsthumsverhältnissen naturgemäss zu gruppiren,' von Georg Frauenfeld; by the Author. 'Revue et Magasin de Zoologie,' 1855, No. 6; by the Editor, M. Guérin-Méneville. 'List of the Specimens of Lepidopterous Insects in the Collection of the British Museum,' Part III. Lepidoptera Heterocera; by the Author, Francis Walker, Esq., F.L.S. A box of Indian insects; by Major Hamilton. A specimen of Sirex gigas; by G. H. Drew, Esq. Bembidium Clarkii (6) and Bembidium obliquum (8) from Northamptonshire; by the Rev. Hamlet Clark.

### *Election of Members.*

Mons. F. Pictet, Professor of Zoology and Comparative Anatomy in the Academy of Geneva, was elected an Honorary Member in the room of Dr. De Haan, deceased; and Edward Henry Burnell, Esq., 32, Bedford Row, was elected an Ordinary Member of the Society.

### *Exhibitions.*

Dr. Power sent for exhibition some rare British Coleoptera, including Agrilus chryseis, Anthraxius nitidula, Rhyncolus ater, Microrhagus pygmæus, all from the New Forest, and Drypta emarginata (2), recently taken by himself near Portsmouth.

Mr. Bond exhibited some Lepidoptera recently taken by him in Cambridgeshire: the more remarkable species were Pionea margaritalis, Nascia cilialis, Eupithecia sparsaria, Anesychia funerella, Opadia funebrana, Argyrolepia Schreibersiana, and a singular dark variety of Arctia villica.

Mr. Baly exhibited a specimen of Cryptocephalus nitens, taken from an ash tree at Cobham, Kent. Mr. Stevens said he captured an example of this species yesterday on a birch tree at Mickleham.

Mr. Doubleday sent for exhibition specimens of Caradrina blanda and C. alsines, species quite distinct, but mixed in collections under the former name.

Mr. Weir exhibited a remarkable variety of Anthrocera Filipendulæ, with only five spots on each of the upper wings, taken *in copulâ* with an ordinary six-spotted specimen. He likewise exhibited Penthina sauciana bred from Vaccinium myrtillus, Anarsia Genistæ bred from Genista tinctoria, and other rarities.

Mr. Dutton exhibited some Lepidoptera recently captured in the Isle of Wight, among which were fine specimens of Agrotis lunigera.

Mr. Douglas exhibited a specimen of Trochilium Chrysidiforme taken by Mr. J. A. Brewer, of Reigate, while sweeping for Coleoptera, near Dover, on the 25th of June last, and presented alive to Mr. Douglas. This species had hitherto only two British representatives; one, now in Mr. Edwin Shepherd's collection, stated in Mr. Stephens's 'Illustrations' to have been captured by Mr. Francillon; the other, in Mr. Curtis's collection, taken by Mr. Leplastrier near Dover.

Mr. Douglas also exhibited Asychna æratella from Darenth Wood, and Butalis fusco-ænea from Headley Lane: both species were taken last month.

Mr. Westwood exhibited a living scorpion brought from Mexico with plants for the Horticultural Society. He also exhibited eggs and living larvæ of the flea of the dog, and stated that Mr. Haliday had recently dissected some of the larvæ, and found that his former opinion, grounded chiefly on the characters of the perfect insect, that the flea belonged to the order Diptera, must be abandoned, and the insect referred to the distinct order Aphaniptera of Kirby. He added that the eggs of the flea were not attached to the surface on which they were laid, as had been stated; for upon moving the cloth or rug on which his dog was accustomed to lie the eggs rolled off.

Mr. Westwood exhibited a specimen of Ludius ferrugineus which he had had alive for a fortnight, and which was reared from an old ash tree by Mr. Boddy.

Mr. Westwood also exhibited specimens of the Saturnia reared at Malta from examples recently introduced from India as S. Cynthia; and he also exhibited specimens of the true Saturnia Cynthia received from Major Jenkins, in India, with a ticket attached stating that this was the species whose caterpillars produced the "Eria" silk. The difference between these specimens and those from Malta was so trifling that he thought Dr. Boisduval had scarcely sufficient grounds for making the Indio-Maltese species distinct from S. Cynthia, as he had recently done in the French 'Annales,' under the name of S. Ricini: he believed if the progeny of a single pair of S. Cynthia was distributed over a wide geographical range, that, after three or four generations, quite as much difference would be observed among the specimens as between these so-called distinct species.

Mr. Stevens exhibited a splendid butterfly, a new species of Agrias recently sent from Villa Nova by Mr. Bates.

Mr. Foxcroft sent for exhibition some Coleoptera and Lepidoptera recently taken in Perthshire. Among the latter were two Polia occulta, apparently differing from the general type of that species only in the darkness of their colour, but their larvæ were said to be totally unlike. This statement was corroborated by a note from Mr. Logan, of Edinburgh, read to the Meeting.

### *Abundance of Noctuidæ.*

Mr. Douglas remarked that the number of Noctuidæ this season appeared to be unusually large near London, and he should like to know if this abundance was general.

Mr. Stevens said that on the previous night, at Mickleham, he saw 800 or 900 Noctuidæ attracted to sugar.

Mr. Westwood said other sweets than sugar were exceedingly attractive to moths: in his garden Noctuidæ abounded about a bed of beans which were infested with Aphides, whose excrement, as was well known, formed a sweet deposit; and they also swarmed around some gooseberry bushes, whose fruit, in consequence of the wet weather, had burst.

The President said that in a large conservatory near Alton he had lately seen large quantities of moths, which, attracted by the scent of the flowers, had entered by the open door and could not find their way out. He added, that Captain Chawner had told him that occasionally, at the lighthouse at Lowestoft, the moths abounded so much at night that the keeper had to sweep the lantern in order to clear them away.

### *The Society's 'Transactions.'*

Part 5, Vol. iii., N. S. of the 'Transactions' was on the table.—*J. W. D.*

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The following was read at the April meeting:—

### *Description of a New Species of Ornithoptera.*

"ORNITHOPTERA BROOKIANA. *Wallace.*

"Expansion 6½ inches. Wings very much elongated; black, with a horizontal band of brilliant silky green. On the upper side this band is formed of seven spots of a subtriangular form, the bases of the four outer being nearly confluent, and of the three inner quite so, forming a straight line across the centre of the wing; the attenuated apex of each spot very nearly reaches the outer margin at each nervule. On the lower wings the green band occupies the centre half, and has its upper margin tinged with purple. The lower wings are finely white-edged. There are some azure atoms near the base of the upper wings. The collar is crimson, and the thorax and abdomen (?) black. Beneath black, upper wings with the green spots opposite the bases of those above, small and notched, the basal one with brilliant purple reflexions, also a purple streak on the anterior margin at the base. Lower wings with a submarginal row of diamond-shaped whitish spots divided by the nervures; base of wings with two elongated patches of brilliant purple. Body obliquely banded with crimson; abdomen black.

"Hab. N.W. Coast of Borneo.

"This magnificent insect is a most interesting addition to the genus Ornithoptera. The green-marked species have hitherto been found only in N. Australia, New Guinea and the Moluccas, and all those yet known so much resemble each other in their style of marking, that most of them have been considered as varieties of the original Papilio Priamus of Linnæus. Our new species is therefore remarkable on two accounts; first, as offering a quite new style of colouring in the genus to which it belongs; and, secondly, by extending the range of the green-marked Ornithopteræ to the N.W. extremity of Borneo. As it has not been met with by the Dutch naturalists, who have explored much of the S. and S.W. of the island, it is probably confined to the N.W. coast. My specimen (kindly given me by Captain Brooke Brooke) came from the Rejang river; but I have myself once seen it on the wing near Sarawak. I have named it after Sir J. Brooke, whose benevolent government of the country in which it was discovered every true Englishman must admire.

"ALFRED R. WALLACE."

## SOCIETY OF BRITISH ENTOMOLOGISTS.

*June* 5, 1855.—Mr. HARDING, President, in the chair.

Messrs. Kent and Doe were elected Subscribers to the Society.

The President exhibited specimens of the following insects:—Trochilium Culiciformis, Lophopteryx carmelita—he remarked that this insect had not been taken at Darenth Wood for nearly thirty years, Peridea trepida, Xylina conspicillaris, and many others: the whole of the above were taken at Darenth Wood during the past month (May).

*July* 3, 1855.—Mr. HARDING, President, in the chair.

Mr. Miller exhibited specimens of the new Tortrix discovered by Mr. Harding feeding on the Eryngium maritimum, or sea-holly; also Cucullia Asteris, and a box of small Lepidoptera,—among others Gelechia tenebrosella, G. pictella, Œcophora Panzerella, Coleophora alcyonipenella, Elachista Gangabella, &c.—*J. T. N.*

## TYNESIDE NATURALISTS' FIELD CLUB.

### *Meeting at Bothal.*

The first meeting of the season of the Tyneside Naturalists' Field Club was held, by invitation of the Rev. Henry Hopwood, Rector, at Bothal and Sheepwash, on Monday, June 11th. According to previous arrangements, the party from Newcastle assembled at an early hour at the Central Station. On alighting at Morpeth they were joined by several other members, with whom they proceeded on foot, by the banks of the Wansbeck, to Bothal, and thence to Sheepwash, examining on their way the various objects of interest which came under their notice. On reaching Sheepwash they met with a kind and courteous reception from the Rev. Henry Hopwood, by whom they were most hospitably entertained. After luncheon, the members of the club, with some ladies who were visiting Mrs. Hopwood, having assembled on the lawn in the Rectory gardens, Mr. Sidney Gibson read a paper on the "History of the Church, Castle, and Barony of Bothal," which he had prepared at the request of the Rector,—first remarking that, as it was to be read upon the spot, his (Mr. Gibson's) object had been to give a brief historical sketch, rather than a description of the locality and its architectural remains.

With regard to the parochial history of Bothal, it would seem that the parish church had not originally nestled under the protection of the castle, but had been situated at Shipwash, much lower down the river. The tradition was that the church formerly standing at Shipwash (which was dedicated in the name of the Holy Sepulchre of our Lord), was the mother church of the parish of Bothal; and it continued to be a separate benefice until the year 1615, when it was annexed to the rectory of Bothal. From the dedication being in honour of the Holy Sepulchre, and from the fact that the Templars had a Preceptory at Chibburn, Mr. Gibson was disposed, however, to attribute the church to a period not earlier than the first Crusade, and to connect it with that illustrious order of military monks. At all events it was probable, he thought, that a church was erected on the site of the existing church of St. Andrew, at Bothal, soon after the reign of Henry I., when the Bertram family acquired those extensive domains. But there was reason to believe that a parish church existed at Bothal before the Conquest, inasmuch as the tithes were amongst the donations made by Robert de Mowbray, the great Norman Earl of Northumberland, to the monastery of Tynemouth. The present church of Bothal was dedicated under invocation of St. Andrew, who seems to have been the favourite saint of the great Wilfrid, in whose footsteps so many edifices of religion rose; but this circumstance alone (Mr. Gibson remarked) would not support a claim of such high antiquity for the church of Bothal. If any church existed here before the time of Athelstan it was probably destroyed by the Danes, and there was reason to believe that it was in ruin at the time of the Conquest. In glancing at the Anglo-Saxon period, Mr. Gibson shortly described the wanderings of the monks with the remains of St. Cuthbert, which had traversed part of the parish of Bothal on the flight from Durham to Lindisfarne in 1069, the monks having passed the Wansbeck at the ford of Shipwash, and rested at a spot in the chapelry of Hebburn, where the chapel of St. Cuthbert was afterwards founded. As regards the fabric of the existing church it appears to have been rebuilt, wholly or in part, early in the thirteenth century, and the chancel is of first pointed architecture. The nave and aisles were replaced late in the fourteenth century by those now standing; and the edifice now consists of a chancel, nave, two aisles, a southern porch, and a campanile in which hang three bells. The clerestory is of elegant middle pointed work. Originally there had been a pointed roof of high pitch, but it was replaced by the present flat roof in 1496, when the living was sequestered for repairs. Bothal church is altogether an interesting edifice, and affords, as many other churches in Northumberland do, an example of the influence of military architecture and of the disturbed state of the Border lands on the form and fabric of the parish church. Thus, the square-headed trefoiled arch, which is common in castellated architecture, is found in many ecclesiastical edifices in Northumberland; and a castle being adjacent, we have a campanile instead of a tower. Passing then to the history of the castle and barony, Mr. Gibson traced the descent of the great family of Bertram, who seem to have acquired Bothal in or not long after the reign of William Rufus, their ancestor, Guy de Balliol, having received these possessions with the other confiscated estates of Earl Robert de Mowbray. Bothal was made a barony as early as the time of Richard Cœur de Lion, and the great baronial family of Bertram flourished here until late in the reign of Edward III. Robert Bertram, the last lord in the male line, seems to have been a man of great energy and martial spirit, and it was he who obtained the royal license to make a castle of his manor-house of Bothal. The noble gate tower, which is the only perfect portion remaining of the Edwardian Castle, is a well-preserved monument of his dominion. This martial chieftain fought at the battle of Nevill's Cross, and captured William Douglas. Malcolm Fleming, Earl of Wigton, was conveyed after the battle to Bothal Castle for safe custody, but was allowed to escape without ransom, for which the Lord of Bothal fell under the King's displeasure; but he seems to have died in the possession of power and honour, and on his death the barony and possessions descended on Helen, his only child, by whose marriage to Robert de Ogle, Bothal came to a branch of that ancient Northumbrian family. After his death the Lady Helen married three successive husbands. She founded a chantry in the church of St. Andrew, at Both[illegible], and is commemorated, together with her first husband, by the magnificent monument which forms so conspicuous a feature in the sacred edifice. Their posterity succeeded to the barony and possessions, and in their time, probably, additions were made to the castle. A survey made in the time of Elizabeth mentions, besides the Great Tower, the Blanch Tower and the Ogle Tower, all which have long been destroyed, though they were represented as standing in a view taken in 1728. Mr. Gibson said it was probably after the acquisition of Bothal by the Ogle family that the edifice known as the Lady Chapel was built. Its ruins stand higher up on the banks of the Wansbeck, on a spot where a hermitage was supposed to have existed. After tracing the descent of the barony and possessions of the Lords of Bothal to the Ducal House of Portland, Mr. Gibson read some characteristic extracts from the will of Robert, sixth Lord Ogle of Bothal, who died in 1562, and from the inventory of the furniture and effects in Bothal Castle at the time of his death. He also read, from the survey made in 1576, the description of the castle as it then existed, and of the kinds of fruit that were cultivated in its gardens, remarking that their record afforded us some glimpses of the life, habits and costume of the Border chieftain of the Elizabethan era. It was painful to contrast the now ruinous state of this castle with its former magnitude and strength; but the whole spot was suggestive of feudal memories, and invested with a picturesque beauty and interest which could hardly be exceeded even in any of the river valleys of Northumberland.

On the motion of the Rev. George Cooper Abbs, of Cleadon House, the thanks of the meeting were given to Mr. Gibson for his very interesting paper.

### *Exhibitions.*

Mr. T. J. Bold exhibited a series of specimens of one of our wild bees and its parasite; the latter (Nomada borealis), he remarked, had hitherto been regarded as a very rare British species.

Two other insects (Hydroporus melanarius, *Sturm*, and H. elongatus, *Sturm*) were also shown, and were noted as additions to our catalogue of water beetles, having been taken by Mr. Bold at Prestwick Car.

The same gentleman communicated a notice of having observed a pied flycatcher in the vicinity of Newcastle, concluding by intimating that he was collecting materials for a catalogue of the Aculeate Hymenoptera of the district, and would be obliged for any assistance that the members could render him.

Mr. Storey laid before the meeting specimens of the mountain melic grass (*Melica nutans*), a species which he had met with during the day, and which he stated was new to the locality.

### *Election of Members.*

The election of members was next proceeded with, when the following gentlemen joined this flourishing society, viz., Rev. Henry Hopwood; Rev. Edward Lacey, Bothal; Charles Gibson, M.D.; Messrs. Edward Spoor, A. M. Dunn, Thos. Stokoe, John Hopper (Newcastle), E. Finch (Blakelaw), and R. W. Swinburne (Cleadon Cottage).

The very cordial thanks of the party having been given to Mr. and Mrs. Hopwood and the ladies for their polite attentions, the meeting broke up.

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## NOTICES OF NEW BOOKS.

'*Annals and Magazine of Natural History.*' Nos. 91 and 92, dated July and August, 1855; *price* 2*s.* 6*d.* each. London: Taylor and Francis, Red Lion Court, Fleet Street.

No. 91 contains the following papers:—

'Observations on the Development of Gonidia (?) from the Cell-contents of the Characeæ, and on the Circulation of the Mucus Substance of the Cell: with a Postscript.' By H. J. Carter, Esq., Assistant-Surgeon H.C.S. Bombay.

'Descriptions of the Animals of certain Genera of Conchifera.' By S. P. Woodward, Esq., F.G.S.

'Notes on some New or little-known Marine Animals.' By Philip Henry Gosse, A.L.S.

'On the Homologies of the Carapace and on the Structure and Function of the Antennæ in Crustacea.' By C. Spence Bate, F.L.S., &c.

'On Double Monstrosity in Fishes.'

Proceedings of Societies:—Linnean, Zoological, Royal Institution, Botanical of Edinburgh.

Miscellaneous:—On the Nereis bilineata; by William Thompson. On a New Species of Thalassidroma; by George Robert Gray, F.L.S., F.Z.S., &c. On the Eggs of Otogyps and Prosthemadera; by H. F. Walter.

No. 92 contains the following papers:—

'Notes on Palæozoic Bivalved Entomostraca.' No. I. Some Species of Beyrichia from the Upper Silurian Limestones of Scandinavia.' By T. Rupert Jones, F.G.S.

'On the Conjugation of the Diatomaceæ.' By J. W. Griffith, M.D., F.L.S.

'On a New Genus of Fossil Cidaridæ, with a Synopsis of the Species included therein.' By Thomas Wright, M.D., F.R.S.E.

'Brief Notices of several New or little-known Species of Mammalia lately discovered and collected in Nepal, by Brian Houghton Hodgson, Esq.' By T. Horsfield, M.D.

'On the Assiminia Grayana and Rissoa anatina.' By William Clark, Esq.'

'Descriptions of Two newly-discovered Species of Araneidea.' By John Blackwall, F.L.S.

'Note on the Descent of Glaciers.' By J. Gwyn Jeffreys, Esq., F.R.S.

Bibliographical Notices:—Catalogue of British Hymenoptera in the Collection of the British Museum. Part I. Apidæ, Bees; by Frederick Smith, M.E.S. Proceedings of the Yorkshire Philosophical Society.

Proceedings of Societies:—Zoological, Botanical of Edinburgh.

Miscellaneous:—On the Organization of the Pedicellate Glands of the Leaf of Drosera rotundifolia; by M. A. Trécul [extracted from the 'Comptes Rendus,' June 25, 1855, p. 1355]. On a New Organ observed in Callitriche; by M. A. Chatin [extracted from the 'Comptes Rendus,' June 18, 1855, p. 1291]. Description of a New Tanager of the Genus Calliste; by Philip Lutley Sclater, M.A. [extracted from the 'Proceedings of the Zoological Society,' Nov. 14, 1854]. On the Spermatozoa of the Crickets; by C. Lespés [extracted from the 'Comptes Rendus,' July 2, 1855].

Mr. Spence Bate's paper on the Function of the Antennæ in Crustacea is highly interesting: after describing these organs with some care, he thus continues:—

"The next question which we have to consider is, to which sense either of these two sets of organs belongs; whether the upper belongs to the auditory and the lower to the olfactory, as I shall endeavour to prove, or *vice versâ*, as maintained by Prof. Milne-Edwards.

"We shall divide the evidences on either side under two heads; the first, that which is derived from an external observation; and the second, that which is derived from its internal organization.

"First, then, from external circumstances: an auditory apparatus is an organ furnished to an animal for one or both of two objects; first, for protection from danger; secondly, for the pleasure derivable from sounds. To animals so low in the scale of beings as the Crustacea, placed as they are in a medium which must considerably modify its character, sound can convey little to the consciousness of the animal beyond a sense of security or danger.

"To enable this to be of the most extensive value, the auditory organ must [be] and always is so placed as to be most exposed to external impressions at all periods; particularly when the animal is at rest or pre-occupied.

"Now if we look at the organ the present state of science attributes to the sense of hearing, we find that, in the most perfectly formed animals, the Brachyura, it is enclosed within a body case, and secured by a calcareous operculum; that it always is so in a state of rest, and only exposed when especially required. Not only is this the case throughout the order, but, in some genera, as Corystes, Cancer, &c., it is again covered by the supplying organs of the mouth.

"If we take into consideration that the inferior antenna is frequently developed into organs assimilating to feet, and frequently used for the purpose of assisting to climb, &c., it seems difficult to admit that it is an organ capable of protecting the animal by its quick detection of the sound of approaching danger.

"If we turn our attention to the superior antenna, we find that in the living animal it is always elevated in the water and never at rest,—always playing with a constant vibration and a jerking motion peculiar to itself in the higher orders. Among the Amphipoda, though constantly erect, the motion is more regular and graceful; this probably is consequent upon the greater relative length of the organ.

"This organ is one that appears as if always on the watch; let the animal be at rest, let it be feeding, no matter, the superior antenna is ever elevated and on constant guard.

"Again, if we turn our attention to the land Crustacea, we find the organ as an antenna disappear; and in Ligia and the amphibious Orchestidæ they are rudimentary, as if the organ, passing from water into a less dense medium, required modification in order to adapt it to the change of circumstances.

"If we take into consideration the nature of sound, and its difference of character when conveyed under water from that of passing through air, the obtuse character of the former, which can scarcely be more than a vibratory action of particles of water, which conveys to us a very modified and imperfect idea of sound, we find it difficult to understand that the organ situated at the base of the under antenna is capable of receiving impressions of sound, enclosed as it is within and covered by a stout calcareous operculum.

"But if we view it as an organ of smell, every objection previously becomes evidence in favour of the idea. The small door, when it is raised, exposes the orifice in a direction pointing to the mouth; this also is the direction of the same organ in all the higher orders. In Amphipoda it is directed inwards and forwards. In every animal it is so situated that it is impossible for any food to be conveyed into the mouth without passing under this organ, and of this the animal has the power to judge its suitability for food by raising the operculum at will, and exposing to it the hidden organ—the olfactory.

"If we turn to the upper antenna, we find that its position, form and power are as capable of fulfilling the office of conducting the sensation of sound, as the lower is that of smell. As I before observed, it is always placed erect, and continually feeling in the water for the first approximation of sensation. The filamentary appendages are always two or more, one of which is supplied with singularly delicate membranous cilia, being apparently prolongations of a similar membrane to that which covers the larger orifice of the olfactory organ. These lengthened and delicate cilia are peculiarly adapted to receive and convey the most minute vibratory sensation of the medium in which they are suspended. These organs when spoken of may conveniently be designated as auditory cilia, and have been found in every species of Crustacea that has been searched for them.

"If we turn our attention to the internal structure of this antenna we shall find that it supports the idea of its being an auditory organ more forcibly than its external analysis. In the Brachyura, as before observed, the first or basal articulation is largely developed: if it be removed from its connexion with the animal, and broken open, the basal articulation will be found occupied by a still smaller chamber, having calcareous walls of a much more delicate character than the integumentary structure. This internal chamber or cell is that which in this paper is supposed to be a cochlea, from its analogy, both in its structure and supposed use, to that organ in higher animals. It is situated in the cavity of the basal articulation of the antenna, and attached to the walls furthest from the median line of the crab. It presents a tendency to a spiral form, but passes not beyond the limits of a single convolution. The calcareous walls extend across the axis of the ideal spire, and the internal cavity is one continuous irregular chamber, the walls of which, at the centre of the axis, closely approximate so as almost to meet.

"This internal cell represents, we think, the cochlea of higher animals, to which it bears some resemblance, both in form and structure. If so, then beyond dispute it identifies the superior antenna as an organ of hearing.

"The internal structure of the inferior antenna differs very materially from the appearances we have just described. In the Brachyura, where the organs are most fully developed, there is attached to the operculum a long osseous tendon or lever, by which the attached muscles raise or close the entire organ, but there is no internal structure of any kind which could identify it as an organ of sound. The aqueous sac mentioned by Edwards I have entirely failed to discover.

"Viewing the two antennæ each as a whole, in their relative positions and connexion with the rest of the animal, we are forcibly led to the conviction that the upper antenna is an organ of hearing and the lower antenna is an organ of smell."

I am desirous of giving every publicity in my power to this ingenious hypothesis, diametrically opposed, though it be, to my own convictions on the subject.

Mr. Thompson's note on Nereis bilineata is as follows:—

"I beg to draw your attention to a fact I have not seen noticed in print. It is, that Nereis bilineata constructs a tube for its domicile. Its usual habitat is the upper coils of any dead whelk that may have been selected by a Pagurus for its domicile. This annelid is well known to the fishermen here, by whom it is much used as a killing bait for whiting. I was not aware of the fact of its constructing a tube for itself until lately, when, on breaking off the top coils, I found that the worm had constructed a tube, with which it had lined its lodgings. The tube is perfectly white, rather strong, and not attached to the whelk shell."

Mr. Blackwall's new spiders are Ciniflo humilis and Nëriene affinis, both captured by Mr. R. H. Meade, the former in Buckinghamshire, in August, 1854, the latter in the vicinity of Burton-on-Trent, and also at Hornsea, on the east coast of Yorkshire.

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'*Transactions of the Entomological Society of London.*' New Series. Vol. III., Parts IV. and V. London: Longmans. 1855.

Part IV. contains 48 pp. of 'Transactions,' 36 pp. of 'Proceedings,' and no plates; it is charged 3*s.*

The papers are intituled—

'Essay on the Genera and Species of British Formicidæ.' By Frederick Smith, Esq. (*concluded*).

'On the British Species of the Genus Stenus, with Notes on the Species of Stenus described by Kirby, and in the Illustrations of British Entomology, by Mr. Stephens; together with Observations upon the Specimens in Mr. Stephens' Collection.' By Messrs. G. R. Waterhouse and E. W. Janson.

'Descriptions of some Species of Brazilian Ants belonging to the Genera Pseudomyrma, Eciton and Myrmica (with Observations on their Economy by Mr. H. W. Bates.)' By Frederick Smith, Esq.

Mr. Smith's paper completes the Catalogue of the British Formicidæ, and will be particularly useful to the students of British Ants, more especially as it corrects some recently-made errors in the nomenclature of our species, for example:—

Myrmica scabrinodis of Nylander, Foerster and Smith = Myrmica rubra, *Curtis,* Trans. Linn. Soc, xxi. 213.

Myrmica ruginodis of Nylander, Foerster and Smith = Myrmica vagans, *Curtis,* Trans. Linn. Soc. xxi. 213.

Myrmica sulcinodis of Nylander and Smith = Myrmica perelegans, *Curtis,* Trans. Linn. Soc. xxi. 214.

This shows how necessary it is to keep pace with the progress of our science on the Continent, if we wish to establish (and who does not?) uniformity of nomenclature.

The paper on the genus Stenus is also of great value, and reflects great credit on the patience and perseverance of its authors.

In Mr. Smith's paper on Brazilian ants the observations on economy by Mr. Bates are particularly valuable and interesting. Of Pseudomyrma oculata he says:—"Its colonies I have hitherto found only in the tumuli of different species of Termes: in some instances I found them in spacious elliptical chambers, in the outer walls of the Termitaria; one colony to each chamber; the chambers wide apart and having no connection with each other; the number of individuals few in each colony; the pupæ are not enclosed in cocoons. In some instances I have found them with their larva [larvæ] and pupæ within the same chambers as the Termes, in different parts of the Termitarium; the workers are sometimes found in numbers coursing rapidly over trees and herbage. Another species [of Pseudomyrma] constructs its Formicarium in the pith tube of dried twigs; the colonies are not numerous."

Part V. contains 48 pp. of 'Transactions,' 16 pp. of 'Proceedings,' and five plates, and is charged *5s.*

The papers, in addition to the conclusion of Mr. Smith's Descriptions of Brazilian ants, are—

'Monograph of the Australian species of Chrysomela, Phyllocharis and allied Genera.' By J. S. Baly, Esq.

'Observations on the Honey Bee, in continuation of the Prize Essay of the Entomological Society for the year 1852.' By J. G. Desborough, Esq.

'Descriptions of some New Species of Lucanidæ.' By J. O. Westwood, F.L.S., &c.

Continuing our extracts from Mr. Bates' 'Observations on the Brazilian Formicidæ,' that indefatigable traveller observes of Eciton legionis, a new species:—"I have only found it in open, sandy and grassy campos; it shows the same irritability and hurried movement as the other species; is very quick to break line and to attack furiously any intruding obstacle. In a procession which I observed there were no individuals with the largely developed mandibles, as in other species. The locality in which I observed it being an open district, it afforded me an opportunity of observing some parts of its habits, and the business which occupies its immense processions; the columns of the other species I have always observed marching in the dense thorny thickets of the forest, so that the same facilities for observation do not offer themselves, and no human endurance can sustain the overwhelming attacks, the cruel sting and bite of these formidable insects. In this smaller species, although they climb by hundreds over one's person, in the same sudden way, the sting is not at all formidable. The first time I met with this species it was near sunset; I found the column consisted of two trains of ants moving in opposite directions; one train empty-handed, the other laden with a variety of the mangled remains of insects, chiefly, however, the larvæ and pupæ of ants. I had no difficulty in tracing the line to the spot from which they were conveying their prey; this was in a low thicket; the Ecitons were moving rapidly about a heap of dead leaves: the tropical twilight was deepening, and I deferred further examination till the next day. On the following morning I found no trace of the ants in the place I had left them the preceding day, nor in the thicket were there any signs of insects of any description: but at the distance of eighty or one hundred yards I found them again, evidently engaged in another piece of business, a razzia of a similar kind, but requiring other resources of their instinct; they were eagerly occupied on the face of an inclined bank of light earth, excavating mines, whence, from the depth of eight or ten inches, they were extracting the bodies of a bulky species of Formica. It was curious to see them crowding round the orifices of the mines, and assisting their comrades to lift out the bodies of the Formicæ; the latter being too bulky for one Eciton to carry, it was torn into pieces, and the laden marauders forthwith started off with their booty. On excavating the earth about the mines, I found the Formicæ at the depth of about eight inches, also their larvæ and pupæ. As fast as I excavated the Ecitons rushed in, seizing the ants; I had great difficulty in securing a few specimens; they disputed them with me, even in my hands. In excavating their mines they assisted each other in so systematic a manner, with an appearance of so much intelligent cooperation, that it was truly a wonderful sight: those in the mines lifted up the pellets of earth to others stationed at the entrance, who forthwith conveyed them to a few inches distance from the place. I now turned towards the line of ants returning with their spoil of mutilated remains. For some distance there were many lines of them moving along the declivity of the bank, but at a short distance these converged; I then traced them to a large indurated and ancient Termitarium: up the ascent of this the Ecitons were moving in a dense column, like a stream of liquid metal; many were now assisting in lugging up the bodies of the Formicæ, and the whole disappeared in one of the spacious tubular cavities which always traverse these old Termitaria from the summit to the base."

We must make room for one more extract; it relates to Myrmica sævissima:—

"On the borders of the river Tapajos, this is the most dreaded ant, the terrible scourge of the river Tapajos. In 1852, I found, along the shores of the long sandy bays of the Tapajos, a continuous line of sediment, eight or ten miles in length, formed entirely of the bodies of the winged individuals of this species. It was the end of the rainy season, and the swarms had been carried away by the squalls of wind into the river, and had subsequently been cast ashore by the swell. This species is exclusively found on sandy soils, in open, semi-cultivated or neglected places: in the shade of the woods not an individual is to be found; careful cultivation and weeding expels them from limited spaces; they increase only in the neighbourhood of deserted houses, or unweeded plantations; consequently, they are a scourge only to the lazy and worthless people who inhabit the shores of this magnificent river. Sometimes they increase to such an extent that not an inch of ground is free from them; they dispute every fragment of food with the inhabitants; clothing they destroy for the sake of the starch, and attack persons with such cruel fury that the lords of the creation are obliged to beat a retreat, and the village becomes deserted. Their sting is very severe; the Brazilians compare it to the prick of a red-hot needle or point, hence the name 'Formiga de fogo.' Their Formicarium is subterranean, and in the village of Aveyros the unweeded streets are covered with their mounds: there are one or two on the floor of the church,—it is impossible, in fact, to avoid an attack. The 'Formiga de fogo' lets no one have any repose; one's legs are instantly covered with them, and they appear to attack in sheer malice. I was frequently obliged to retreat to the house of the Commandant, where it was my daily custom to enjoy an evening chat with the priest and a few neighbours; seated on chairs, with stools to support our feet, the ground being in full possession of the spiteful Myrmica sævissima."

## *Artificial Rearing of Salmon, and some of its Results.*

**Another** most important point has just been established in regard to the history and habits of the salmon, in connexion with the very interesting experiments which have for nearly two years been carried on at Stormontfield. On Friday morning last, a beautiful grilse of 5½ lbs. weight was caught on one of the City of Perth's fishings at Darry Island, bearing perfectly indubitable evidence of being one of the marked fish which were liberated from the Stormontfield Ponds in May and June last. Another specimen, we hear, was caught a week before at the foot of the Willowgate. In addition to these, we noticed, a fortnight ago, that a grilse was said to have been caught some days previously at the mouth of the Earn, similarly marked: the truth of this statement, as we remarked at the time, we have no reason to doubt, but the actual specimen itself not having been preserved, we did not feel warranted, upon the ground of it, to attempt to found any definite conclusions in regard to the various theories which have been so earnestly advocated upon this interesting and important subject. The specimen caught at Darry Island, however, having been preserved and sent to Mr. Buist's office, where it was exhibited during the day to hundreds of visitors, brings all controversy upon this branch of the subject irrefragably to an end. There can be no doubt whatever as to the genuineness of this specimen; the dead fin had been clean cut off,—the mode in which the smolts were marked on their liberation from the ponds,—and the abscission was completely cicatrized, and had evidently been so for some considerable time.*

That the full bearing of this interesting result may be more completely seen, we shall once more trace the progress of the experiment from the beginning.

In November and December, 1853, many thousands—as nearly as could be estimated 300,000—of ova were deposited in the boxes.

In April and May, 1854, the hatching took place. On the 15th of April, little fish were first observed at large in the troughs. We may remark, however, that in some more sheltered localities, where similar experiments were being carried on, at the same time, in a small way, by private gentlemen, the eggs were found, in one case, at least, to have been hatched in sixty days from the time they were deposited. In this instance they were laid under a stream of spring water just at its exit from the rock.

In June, 1854, the tiny inmates of the boxes, having generally attained the size of about an inch and a half in length, were introduced to the larger sphere of the pond, where, for twelve months, they were carefully tended and fed.

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* In addition to the specimens referred to above, we saw on Tuesday, in Mr. Buist's office, another beautifully grown grilse of 5 lbs. weight, which had that morning been captured at Carthagena Bank, on the Seaside fishings, two miles below Errol, belonging to the Glover Incorporation of Perth. In the case of this fish, the dead fin was not only entirely cut off, but the scales had completely grown over the part which had been cut.

In May and June, 1855, a large proportion of the fry, having then reached the condition of smolts and manifesting the most undoubted evidences of the time of migration, having arrived, the sluice of the pond was removed, and free egress given to all the fish which might desire their liberty. During the latter part of May, and the earlier days of June, almost all the silvery-coated smolts had voluntarily left the pond, and drifting daily, in shoals of from 1000 to 10,000, into a temporary erection at the confluence of the conduit and the river, constructed for the convenience of marking, were, after suitable numbers had from time to time been marked, allowed ultimately to escape. About one in one hundred, we believe, was the proportion so marked. On May 29 a very much larger number than on any other day sought for the river, and a proportionally large quantity were of course marked.

And now, on Friday last, the 20th of July, after an absence of not more than two months, we have the perfectly indisputable result of one at least of those smolts, so shortly liberated, having returned from the sea a beautiful and well-grown grilse of 5½ lbs. weight.

The very largest of the smolts which left the ponds in May and June measured only about 7 inches in length, and weighed from ½ to 1 oz. The grilse caught on Friday measures 24⅝ inches in length, and 12½ inches in circumference, weighing, as we have said, 5½ lbs. That the comparative sizes of the same fish at the two stages of its growth may be more easily and accurately apprehended, a very beautifully executed photograph has been taken by Mr. Cumming,—now practising that wonderful art in this place,—for the purpose of being printed, of the marked grilse caught on Friday, along with a preserved specimen of the largest size of the smolts as they were liberated in May and June.

Thus is one more perfectly irrefragable proof afforded of the fact, which for some time, indeed, has been satisfactorily enough established, that the young of the salmon which migrate to the sea in the earlier part of the season as smolts, return in the later part of the same season as grilses. This is the first occasion, we suppose, of the fact having been publicly demonstrated in the Tay: but in other rivers it had been clearly proved years ago. In a very interesting and valuable work on the 'Natural History and Habits of the Salmon,' by Mr. Andrew Young, of Invershin, superintendent of the Duke of Sutherland's extensive fishings, we find the following stated as the result of that gentleman's repeated experiments in regard to this point:—

"I marked," says Mr. Young, "a number of smolts on their way to the sea, and continued this process for several summers, but yearly changed the mark from one part of the fish to another. This marking was done particularly for the purpose of ascertaining the exact time that the smolt was absent from the river until it returned a grilse; because it was the opinion of some, and some even assert it yet, that smolts are a whole year in the sea before their return; but if they were a year they must be more—they must have been *fourteen months.* However, without marking them at all, we are certain that salmon in no stage of their migrations remain that time absent from the rivers. What I marked was in April and May, and in course of June and July following we caught several of them with the same marks, grilses varying from three to eight pounds, but did not catch in the following year a grilse with the smolt-mark of the previous year. And, although I continued marking and searching for them on their return, the result was invariably the same. And, from these experiments and the length of time the marked smolts were absent, I am of the decided opinion that the great majority of them remain away only about two months."

But the duration of the smolts' absence at the sea before returning as grilses is not the point which has been principally debated in this locality. Our controversy has been chiefly upon a point far antecedent to this. Our readers will remember, that after having successfully reared some 200,000 or 300,000 young fish, it was, in the early part of May last, keenly discussed—what we were to make of them; whether they were to be allowed, at the end of the first year, after hatching, to seek their way to the sea; or whether they should be detained in the ponds until the end of the second. Upon this point the authorities were quite at variance. Mr. Wilson, of Edinburgh, and Mr. Shaw, of Drumlanrig, after visiting the ponds, pronounced for a two years' nursing, while Mr. Young, of Invershin, who had never seen them, but, basing his opinion upon the result of his own experience elsewhere, was equally decided in favour of only one. The balance of authority seemed to be against Mr. Young, and at one time, we believe, it was resolved to confine the whole stock till May next year. A week or two's further experience and observation, however, speedily turned the scale against the two-year theory. The rapid growth of the fry, the large proportion which immediately progressed into indisputable smolts, and the striking evidences which the larger inhabitants of the ponds themselves clearly manifested that the time of migration had really arrived, led to the wiser resolution of the committee, that the more advanced and matured of their charge should be allowed to follow the dictates of their nature. The result has proved the wisdom of this resolution. To have confined the whole fish would certainly not have [illegible] that salmon fry remain two years in the river before going to the sea; while, by the course which has been adopted, it has been proved that the larger part of them remain in the river only one year. We cordially congratulate all the gentlemen concerned upon this highly satisfactory and gratifying result of their experiment; and we trust we shall speedily have to congratulate those gentlemen more immediately interested, perhaps, in the success of this scheme for increasing the produce of the river, upon a very abundant grilse season.

But, while several points in regard to the natural history of the salmon have been thus clearly and most satisfactorily determined, one very interesting question is still pending at Stormontfield. While all the ova were deposited in November and December, 1853, and all the hatching was completed in April and May, 1854, only about two-thirds of the fry had attained the migratory stage in May and June, 1855. One-third of the original stock are still in the pond, and, although the sluice has never been closed since it was first opened in May, they manifest no desire whatever to leave it. In point of fact, with perfectly free means of egress, not one of them has left the pond since the general migration ceased at the 7th of June last. Thus, while one portion of the same hatching are being captured in the river, beautifully grown grilses of 24 inches in length, another portion is still enjoying the shelter of the pond, tiny creatures, none of them more than three or four inches long. The result of this striking feature in the experiment will be watched with much interest. It may be, that, while Mr. Young was right in holding that smolts migrated to the sea at the end of the first year after hatching, and his opponents were wrong in maintaining that they only migrated at the end of the second, they, too, were so far right, should it be found, notwithstanding the migration of a portion at the end of the first year, that a portion also remains over the second.

We can only remark now, in regard to the sexual question raised in connexion with this subject, that nothing whatever has as yet been established in regard to it at Stormontfield, further than that the grilse taken on Friday was a female, and that on Tuesday a male; and that any observations that have been made on the small fish give reason to conclude that there are both male and female now in the ponds.—*Perthshire Courier, July* 26, 1855.*

*Memorandum on Dr. Knox's papers in the last 'Zoologist.'*—Two notes were appended to Dr. Knox's papers in the last number as the proofs passed through that gentleman's hands. Both entirely escaped me until my attention was called to them by correspondents. The first is at p. 4778, and relates to the supposed death of M. Valenciennes. I have reason to hope that distinguished zoologist is still living and in good health. The second is at p. 4798, and relates to myself: the conversation to which the Doctor refers related to the experiments so often recorded of keeping tadpoles in the dark, and thus prolonging their tadpole existence.—*Edward Newman.*

*Occurrence of the Spined Loach* (Botia tænia) *near Dorking.*—I took this pretty little fish about a fortnight ago in a little muddy stream that runs into the Mole just below the Bridge at Brockham Lodge, the residence of my friend William Bennett, whose hospitality I was enjoying. I was fishing for Hydradephaga, and, on seeing the little creatures wriggling at the bottom of the net, I supposed the first and second haul to be juvenile beardies, and threw them in accordingly; but the uniformity of size at last struck me, and this, inducing a closer inspection, *oculis armatis*, *i.e.* having put on my specs, I found myself possessed of a fish whose personal acquaintance I had not previously made. Mr. Yarrell says it is called "the groundling;" but I certainly can scarcely suppose that it is known as distinct from the beardie by any of those who apply English names, and I would rather believe that the terms loach, stone loach, beardie and groundling apply equally to the larger species. There is nothing by which this fish is likely to be distinguished from the beardie, unless by the instructed eye of science, which imparts an interest and a value to all that it beholds. It occurred in coarse grass floating over a muddy bottom at the very edge of the stream, and the habitat did not extend above half a dozen yards. I may here remark that the undulating outline of the back, which gives so marked a character to Mr. Yarrell's figure, was wholly unobservable in the living fish; and as this character is not mentioned, I believe it possible that it may be due to the process of preserving, through which the little fellow had doubtless passed before sitting to the artist who has immortalized him in the 'British Fishes.'—*Edward Newman.*

*The Snake and Child Exhibition.—The Child Bitten Repeatedly, and the Father Arrested.*—Several hundred people visited Cochituate Hall yesterday afternoon, to witness, it is hoped, the last exhibition of what have been falsely termed the "charmed snake and child." Our readers may be assured that there is no "charming" or "fascination" whatever connected with the show; but, on the contrary, the whole affair is a gross attempt to deceive the public at the expense of merciless torture to a little girl of tender years, who has been so often bitten by the reptile that the cruel and disgusting exhibition is likely to be stopped. Yesterday afternoon the father was taken into custody on complaint of Dr. I. W. Ayer, reporter for the Chronicle.—*Evening Transcript, July* 26, 1855.

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* Obligingly communicated by William Yarrell, Esq.

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GEODEPHAGA, to the Rev. J. F. Dawson;
COLEOPTERA in General, to E. W. Janson, Esq.;
HYMENOPTERA, to Frederick Smith, Esq.; and
LEPIDOPTERA, to H. T. Stainton,
Mountsfield, Lewisham, August, 1855.

N.B. The Entomologist's Annual for 1855 (for which a steady weekly demand still continues) already rejoices in a Circulation of nearly *One Thousand*.

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